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INTRA-BLOC
AND INTERNATIONAL TELECOMMUNICATIONS
OF THE SINO-SOVIET BLOC
1950-65
(SUPPLEMENT)



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FOREWORD

This report is a supplement to Intra-Bloc and International Telecommunications of the Sino-Soviet Bloc, 1950-65, June 1961, SECRET, presenting new data of high validity on the planned intra-Bloc and international semiautomatic telephone network. This report also shows the growth of television facilities of the International Radio-broadcasting and Television Organization (OIRT). In addition, two maps depicting the present status of high-capacity telecommunications lines in the Soviet Bloc, prepared by the Electronics and Telecommunications Subcommittee of the Economic Intelligence Committee, have been included as background.

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INTRA-BLOC AND INTERNATIONAL TELECOMMUNICATIONS
OF THE SINO-SOVIET BLOC
1950-65*

(SUPPLEMENT)

I. Planned Intra-Bloc and International Semiautomatic Telephone System

The USSR and the European Satellites, along with Yugoslavia, intend to establish a semiautomatic (operator distance dialing) and later a fully automatic (subscriber distance dialing) long-distance telephone network that will interconnect the capital cities of all the European Communist countries with one another and with the capitals of most of the remaining countries of Europe. The network was first proposed at a meeting in December 1957 of the Organization for Cooperation Among the Socialist Countries in the Fields of Post and Communications (OSS)** in Moscow. 2/ At this meeting, attended by the ministers of communications of the various countries of the Soviet Bloc*** and Yugoslavia, Resolution No. 7 was drafted calling for the preparation of a plan for the proposed telephone network. Two additional meetings, one in Prague in 1958 and one in Budapest in 1960, established the general concept of the network and delegated to Czechoslovakia the primary responsibility for preparing "technical conditions." Specifications were to be submitted for approval to the OSS and then to the Chairman of Section 9 of CEMA by March 1961. 3/

At the OSS meeting in June 1961 in Prague, the plan for routing of telephone traffic over the semiautomatic telephone network was submitted and approved. 4/ The suggestions and opinions of the USSR, Hungary, East Germany, and Poland were incorporated in the plan submitted by Czechoslovakia. Although completion of the semiautomatic network originally was planned for 1963, an extension of the completion date to 1964 was allowed. The original planned completion dates for each country are given in Appendix A. The fully automatic network will be completed in approximately 10 years.

* The estimates and conclusions in this report represent the best judgment of this Office as of 1 March 1962.

** For a description of the membership, organization, and functions of OSS and Section 9 of the Council for Mutual Economic Assistance (CEMA), see source 1/. (For serially numbered source references, see Appendix B.)

*** For the purposes of this report the Soviet Bloc encompasses the USSR, Albania, Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, and Rumania.

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The semiautomatic network, as approved, will encompass the following:

1. Both direct and alternate routing will be employed. 5/
2. Flexible switching between transit centers will be available. 6/
3. On all direct routes an allowance of 10 percent additional capacity will be made available -- 5 percent for alternate routing and 5 percent for emergency routing. 7/
4. Preselection of alternate routes will be established. 8/
5. Twelve-telephone channel carrier-frequency equipment will be utilized. 9/
6. Standards of the International Telegraph and Telephone Consultative Committee (CCITT) and the International Electrotechnical Commission (IEC) will be observed. 10/
7. Crossbar telephone exchange equipment will be employed.

The fully automatic network, to be completed in about 10 years, will incorporate "contactless" (electronic) telephone exchanges utilizing high-frequency transistors and semiconductors in the then operational semiautomatic network. 11/ Problems in research and development, however, have so far prevented the setting of a specific date for the completion of the fully automatic network.

Transmission facilities to be employed in the network will include microwave radio relay, multiconductor and coaxial cable, and open wire lines. 12/ Specifications for the use of particular facilities on specific routes are not now known.

The terminal cities in the network, the number of channels between terminals, and the routings involved are shown in the chart, Figure 1.* A schematic presentation showing the total number of channels between major junction points is given on the map, Figure 2.** The status of high-capacity telecommunications facilities in the USSR and the European Satellites is shown on the maps, Figures 3 and 4.** In many cases the schematic routings shown in Figure 2 can be traced more precisely by reference to Figures 3 and 4. For the non-Bloc portion of the network, negotiations are still to be completed. 14/ The general routing of traffic outside countries of the Soviet Bloc, therefore, is only tentative.

* Following p. 2.

** Inside back cover.

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FIGURE 1
SOVIET BLOC: TERMINAL CITIES, ROUTINGS AND NUMBERS OF CHANNELS
IN THE PLANNED INTA-BLOC AND INTERNATIONAL SPATIOMATRIC TELEPHONE NETWORK

Country	Terminal City	Routing	Number of Channels	Country	Terminal City	Routing	Number of Channels
1	USSR	1. Moscow	1	1	USSR	1. Moscow	1
2	USSR	2. Leningrad	1	2	USSR	2. Leningrad	1
3	USSR	3. Minsk	1	3	USSR	3. Minsk	1
4	USSR	4. Kiev	1	4	USSR	4. Kiev	1
5	USSR	5. Odessa	1	5	USSR	5. Odessa	1
6	USSR	6. Rostov	1	6	USSR	6. Rostov	1
7	USSR	7. Volgograd	1	7	USSR	7. Volgograd	1
8	USSR	8. Samara	1	8	USSR	8. Samara	1
9	USSR	9. Ufa	1	9	USSR	9. Ufa	1
10	USSR	10. Kazan	1	10	USSR	10. Kazan	1
11	USSR	11. Tashkent	1	11	USSR	11. Tashkent	1
12	USSR	12. Baku	1	12	USSR	12. Baku	1
13	USSR	13. Yerevan	1	13	USSR	13. Yerevan	1
14	USSR	14. Tbilisi	1	14	USSR	14. Tbilisi	1
15	USSR	15. Vladikavkaz	1	15	USSR	15. Vladikavkaz	1
16	USSR	16. Novosibirsk	1	16	USSR	16. Novosibirsk	1
17	USSR	17. Khabarovsk	1	17	USSR	17. Khabarovsk	1
18	USSR	18. Khabarovsk	1	18	USSR	18. Khabarovsk	1
19	USSR	19. Khabarovsk	1	19	USSR	19. Khabarovsk	1
20	USSR	20. Khabarovsk	1	20	USSR	20. Khabarovsk	1
21	USSR	21. Khabarovsk	1	21	USSR	21. Khabarovsk	1
22	USSR	22. Khabarovsk	1	22	USSR	22. Khabarovsk	1
23	USSR	23. Khabarovsk	1	23	USSR	23. Khabarovsk	1
24	USSR	24. Khabarovsk	1	24	USSR	24. Khabarovsk	1
25	USSR	25. Khabarovsk	1	25	USSR	25. Khabarovsk	1
26	USSR	26. Khabarovsk	1	26	USSR	26. Khabarovsk	1
27	USSR	27. Khabarovsk	1	27	USSR	27. Khabarovsk	1
28	USSR	28. Khabarovsk	1	28	USSR	28. Khabarovsk	1
29	USSR	29. Khabarovsk	1	29	USSR	29. Khabarovsk	1
30	USSR	30. Khabarovsk	1	30	USSR	30. Khabarovsk	1
31	USSR	31. Khabarovsk	1	31	USSR	31. Khabarovsk	1
32	USSR	32. Khabarovsk	1	32	USSR	32. Khabarovsk	1
33	USSR	33. Khabarovsk	1	33	USSR	33. Khabarovsk	1
34	USSR	34. Khabarovsk	1	34	USSR	34. Khabarovsk	1
35	USSR	35. Khabarovsk	1	35	USSR	35. Khabarovsk	1
36	USSR	36. Khabarovsk	1	36	USSR	36. Khabarovsk	1
37	USSR	37. Khabarovsk	1	37	USSR	37. Khabarovsk	1
38	USSR	38. Khabarovsk	1	38	USSR	38. Khabarovsk	1
39	USSR	39. Khabarovsk	1	39	USSR	39. Khabarovsk	1
40	USSR	40. Khabarovsk	1	40	USSR	40. Khabarovsk	1
41	USSR	41. Khabarovsk	1	41	USSR	41. Khabarovsk	1
42	USSR	42. Khabarovsk	1	42	USSR	42. Khabarovsk	1
43	USSR	43. Khabarovsk	1	43	USSR	43. Khabarovsk	1
44	USSR	44. Khabarovsk	1	44	USSR	44. Khabarovsk	1
45	USSR	45. Khabarovsk	1	45	USSR	45. Khabarovsk	1
46	USSR	46. Khabarovsk	1	46	USSR	46. Khabarovsk	1
47	USSR	47. Khabarovsk	1	47	USSR	47. Khabarovsk	1
48	USSR	48. Khabarovsk	1	48	USSR	48. Khabarovsk	1
49	USSR	49. Khabarovsk	1	49	USSR	49. Khabarovsk	1
50	USSR	50. Khabarovsk	1	50	USSR	50. Khabarovsk	1
51	USSR	51. Khabarovsk	1	51	USSR	51. Khabarovsk	1
52	USSR	52. Khabarovsk	1	52	USSR	52. Khabarovsk	1
53	USSR	53. Khabarovsk	1	53	USSR	53. Khabarovsk	1
54	USSR	54. Khabarovsk	1	54	USSR	54. Khabarovsk	1
55	USSR	55. Khabarovsk	1	55	USSR	55. Khabarovsk	1
56	USSR	56. Khabarovsk	1	56	USSR	56. Khabarovsk	1
57	USSR	57. Khabarovsk	1	57	USSR	57. Khabarovsk	1
58	USSR	58. Khabarovsk	1	58	USSR	58. Khabarovsk	1
59	USSR	59. Khabarovsk	1	59	USSR	59. Khabarovsk	1
60	USSR	60. Khabarovsk	1	60	USSR	60. Khabarovsk	1
61	USSR	61. Khabarovsk	1	61	USSR	61. Khabarovsk	1
62	USSR	62. Khabarovsk	1	62	USSR	62. Khabarovsk	1
63	USSR	63. Khabarovsk	1	63	USSR	63. Khabarovsk	1
64	USSR	64. Khabarovsk	1	64	USSR	64. Khabarovsk	1
65	USSR	65. Khabarovsk	1	65	USSR	65. Khabarovsk	1
66	USSR	66. Khabarovsk	1	66	USSR	66. Khabarovsk	1
67	USSR	67. Khabarovsk	1	67	USSR	67. Khabarovsk	1
68	USSR	68. Khabarovsk	1	68	USSR	68. Khabarovsk	1
69	USSR	69. Khabarovsk	1	69	USSR	69. Khabarovsk	1
70	USSR	70. Khabarovsk	1	70	USSR	70. Khabarovsk	1
71	USSR	71. Khabarovsk	1	71	USSR	71. Khabarovsk	1
72	USSR	72. Khabarovsk	1	72	USSR	72. Khabarovsk	1
73	USSR	73. Khabarovsk	1	73	USSR	73. Khabarovsk	1
74	USSR	74. Khabarovsk	1	74	USSR	74. Khabarovsk	1
75	USSR	75. Khabarovsk	1	75	USSR	75. Khabarovsk	1
76	USSR	76. Khabarovsk	1	76	USSR	76. Khabarovsk	1
77	USSR	77. Khabarovsk	1	77	USSR	77. Khabarovsk	1
78	USSR	78. Khabarovsk	1	78	USSR	78. Khabarovsk	1
79	USSR	79. Khabarovsk	1	79	USSR	79. Khabarovsk	1
80	USSR	80. Khabarovsk	1	80	USSR	80. Khabarovsk	1
81	USSR	81. Khabarovsk	1	81	USSR	81. Khabarovsk	1
82	USSR	82. Khabarovsk	1	82	USSR	82. Khabarovsk	1
83	USSR	83. Khabarovsk	1	83	USSR	83. Khabarovsk	1
84	USSR	84. Khabarovsk	1	84	USSR	84. Khabarovsk	1
85	USSR	85. Khabarovsk	1	85	USSR	85. Khabarovsk	1
86	USSR	86. Khabarovsk	1	86	USSR	86. Khabarovsk	1
87	USSR	87. Khabarovsk	1	87	USSR	87. Khabarovsk	1
88	USSR	88. Khabarovsk	1	88	USSR	88. Khabarovsk	1
89	USSR	89. Khabarovsk	1	89	USSR	89. Khabarovsk	1
90	USSR	90. Khabarovsk	1	90	USSR	90. Khabarovsk	1
91	USSR	91. Khabarovsk	1	91	USSR	91. Khabarovsk	1
92	USSR	92. Khabarovsk	1	92	USSR	92. Khabarovsk	1
93	USSR	93. Khabarovsk	1	93	USSR	93. Khabarovsk	1
94	USSR	94. Khabarovsk	1	94	USSR	94. Khabarovsk	1
95	USSR	95. Khabarovsk	1	95	USSR	95. Khabarovsk	1
96	USSR	96. Khabarovsk	1	96	USSR	96. Khabarovsk	1
97	USSR	97. Khabarovsk	1	97	USSR	97. Khabarovsk	1
98	USSR	98. Khabarovsk	1	98	USSR	98. Khabarovsk	1
99	USSR	99. Khabarovsk	1	99	USSR	99. Khabarovsk	1
100	USSR	100. Khabarovsk	1	100	USSR	100. Khabarovsk	1

When completed, the planned semiautomatic and later fully automatic telephone network will improve substantially the exchange of telephone traffic among countries of the Soviet Bloc and between these countries and the other areas of Europe. Furthermore, the transmission facilities that this network will use provide substantially more capacity on many routes than that needed strictly for international telephone service. This additional capacity probably will be used for international telegraph* and other telecommunications services as well as for domestic service.

II. International Radiobroadcasting and Television Organization (OIRT)

The OIRT is an organization dominated by the Soviet Bloc that effects cooperation among the Bloc and some non-Bloc member countries in the field of radiobroadcasting and television.** An outgrowth of the International Broadcasting Organization (OIR),*** the OIRT considers problems of common concern to its members and sponsors cooperative action for their solution. Through its technical, program, and television commissions it recommends operating standards and procedures. It also encourages the exchange of information among member countries. The OIRT cooperates with the International Telecommunication Union (ITU); the EBU; the United Nations Economic, Scientific, and Cultural Organization (UNESCO); and the International Film and Television Council. 15/

One of the most important actions taken by the OIRT thus far has been the approval in January 1960 of the establishment of a Bloc-wide television network to be known as "Intervision." Czechoslovakia, East Germany, Poland, and Hungary were the initial members of Intervision, followed shortly thereafter by the USSR. Bulgaria and Rumania are expected to join sometime in 1962, and it is anticipated that the Far Eastern members of OIRT will eventually participate in Intervision. It has been the intention since the beginning that Intervision would exchange live television programs with Eurovision, the Western European television network sponsored by the EBU. Although more than 200 live programs have been exchanged between the two networks since April 1961, the majority have involved only Czechoslovakia and East Germany on the OIRT side. The growth of television transmitters and receivers in OIRT member countries during the period 1951-60 is summarized in the chart, Figure 5.† 16/

* As many as 24 sixty-word-per-minute teletype channels can be derived from 1 telephone channel.

** Finland, Iraq, Egypt (UAR), Cuba, and Mali are the non-Bloc members of the OIRT.

*** The OIR was originally formed in 1946 and had a membership of 28 European countries. As the USSR and other member countries from the Bloc began to use the organization for political purposes, however, all non-Bloc countries except Finland withdrew and formed the European Broadcasting Union (EBU).

† Following p. 4.

Two factors have limited the scope of Intervision to date -- the relatively slow development of television in the more underdeveloped countries of the Bloc and the limited transmission facilities available for exchanging live programs across national borders. Although intra-Bloc and international microwave radio relay and coaxial cable facilities capable of carrying television programs are now being introduced, it will be some years, probably not before 1965, before planned networks will be sufficiently completed to enable the full interchange of television programs among all OIRT member countries and between all OIRT and EBU members.

III. Implications

The basic report to which this report is a supplement treated in some detail the rather ambitious plans of the Soviet Bloc to build integrated networks of telecommunications during the 1959-65 period. These networks, employing modern technologies, are intended to carry telephone, telegraph, television, and newer services such as data signals. The intra-Bloc networks, additionally, are intended to interconnect with similar facilities in adjacent countries, especially in Western Europe. To achieve this end in the easiest manner, the technical parameters of the network adhere to international (ITU/CCITT) standards.

There are clear indications that these plans are in fact being implemented. The intra-Bloc semiautomatic telephone network now being built probably will be completed by 1964. At the same time, the Intervision television network is being extended section by section. The evidence also is clear that when the transmission lines for these networks are built, facilities will be included for international connections as well.

It is concluded from this performance that the Bloc was indeed serious in intention when it formulated these ambitious plans. The intra-Bloc facilities certainly will aid in the achievement of tighter cohesion between the countries of the Bloc in the conduct of their mutual affairs. The provision of international connections to these facilities seems to show patently that the Bloc expects to increase its communications with the outside world, especially Western Europe.

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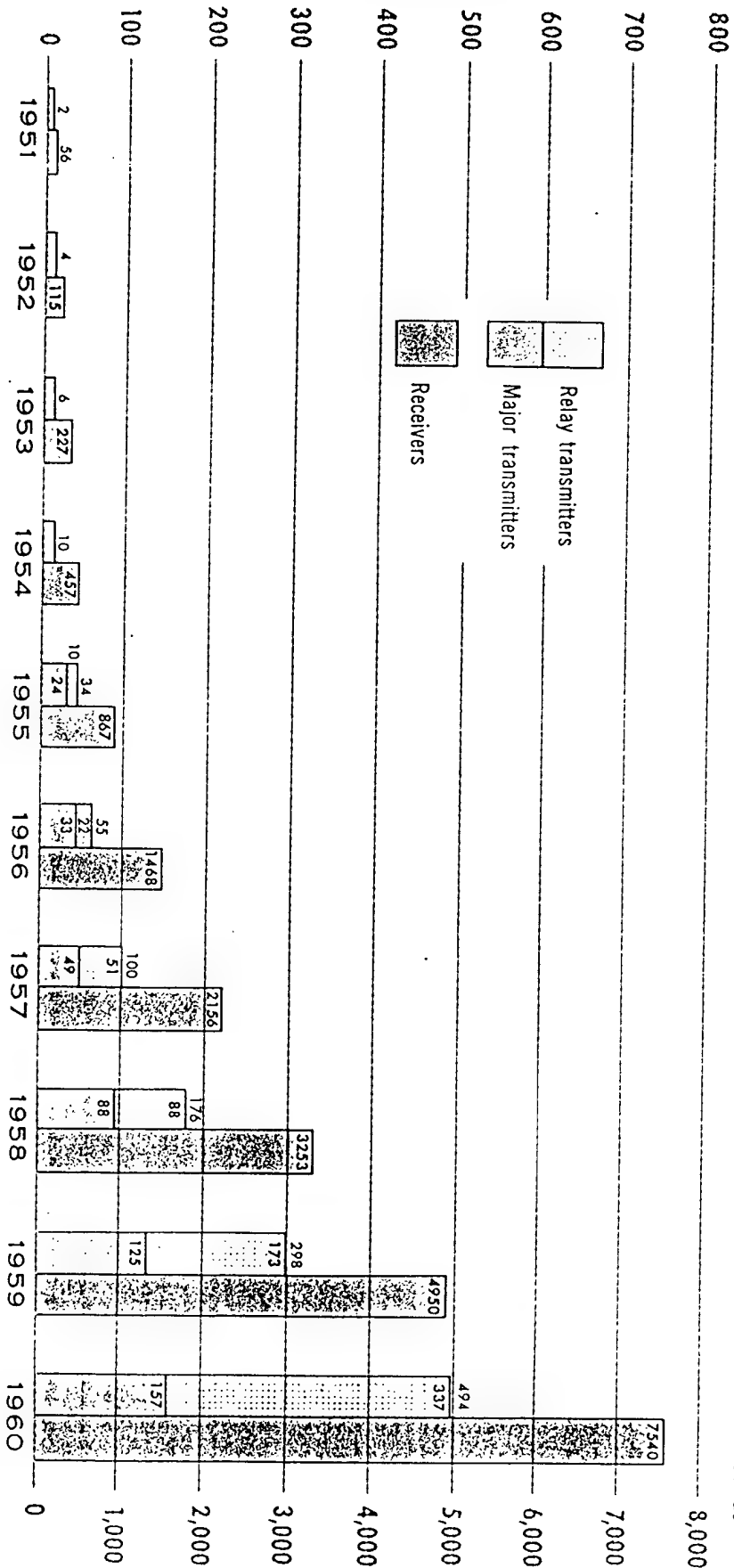
Figure 5

Television Transmitters and Receivers in Countries Belonging to the International Radiobroadcasting and Television Network (OIRT)

Transmitters
in Units

1951-60

Receivers
in Thousands



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APPENDIX A

COMPLETION DATES FOR EXCHANGES AND CIRCUITS IN THE PLANNED INTRA-BLOC AND INTERNATIONAL SEMIAUTOMATIC TELEPHONE NETWORK OF THE SOVIET BLOC a/

Country	Semiautomatic Telephone Exchanges		International Telephone Circuits	
	City	Year b/	Connection c/	Year b/
USSR	Moscow	1962	To all countries	1961/62
Poland	Warsaw	1963	To Finland, Sweden, Norway, and Denmark	Already completed for manual operation
East Germany	East Berlin	1963	To all remaining countries	1962/63
Czechoslovakia	Praque	1963	To all countries	1963
Hungary	Budapest	1963	To East Germany, Poland, USSR, Czechoslovakia, Sweden, Belgium, Great Britain, Italy, and Switzerland	1961
Rumania	Bucharest	1963	To France, West Germany, Austria, and Holland	1962
Bulgaria	Sofia	1963	To Bulgaria, Rumania, and Yugoslavia	1963
			To all countries	1963
			To all countries	1963

- a. 1/
- b. As the OSS gave a 1-year extension from 1963 to 1964 for completion of the over-all network, it is probable that some of the completion dates shown above have been changed.
- c. The countries to be included in the network are shown on the map, Figure 2, inside back cover.

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APPENDIX C

SOURCE REFERENCES

Evaluations, following the classification entry and designated "Eval.," have the following significance:

<u>Source of Information</u>	<u>Information</u>
Doc. - Documentary	1 - Confirmed by other sources
A - Completely reliable	2 - Probably true
B - Usually reliable	3 - Possibly true
C - Fairly reliable	4 - Doubtful
D - Not usually reliable	5 - Probably false
E - Not reliable	6 - Cannot be judged
F - Cannot be judged	

"Documentary" refers to original documents of foreign governments and organizations; copies or translations of such documents by a staff officer; or information extracted from such documents by a staff officer, all of which may carry the field evaluation "Documentary."

Evaluations not otherwise designated are those appearing on the cited document; those designated "RR" are by the author of this report. No "RR" evaluation is given when the author agrees with the evaluation on the cited document.

Except for CIA finished intelligence, all sources are evaluated RR 2.

1. CIA. OSS: Coordinating Mechanism for Post and Telecommunications in the Sino-Soviet Bloc (unpublished).
S,
2. CIA. CS, 19 Sep 61, p. 4. S.
3. Ibid., p. 5. S.
4. CIA. FDD Summary Weekly Economic Report on Eastern Europe, 24 Oct 61, 29. OFF USE.

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5. CIA. CS, 19 Sep 61, p. 7, 8. S.
6. Ibid., p. 10. S.
7. Ibid.
8. Ibid.
9. Ibid., p. 33-34. S.
10. CIA. CS, 23 May 61, p. 43. S.
11. Ibid., p. 14, 45-46. S.
12. CIA. CS, 19 Sep 61, p. 20. S.
13. Ibid., p. 10, 11. S.
14. Ibid., p. 34. S.
15. Telecommunications Journal, vol 28, no 8, Aug 61, p. 521-526. U.
16. Ibid.
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